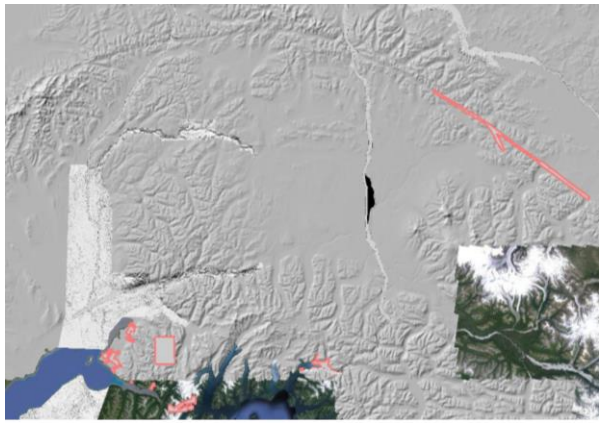
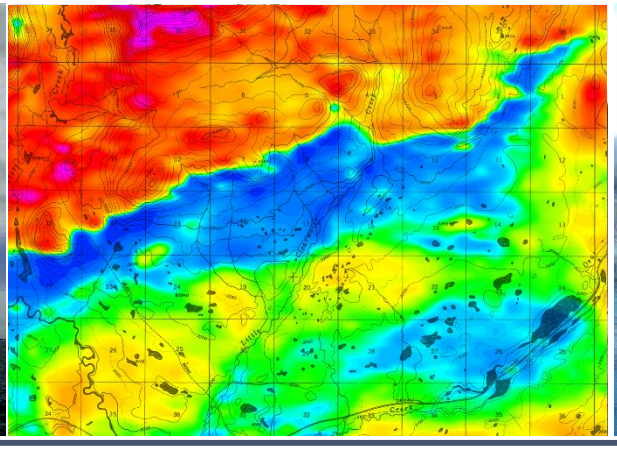


# State of Alaska
# Department of Natural Resources
# *Geospatial Mapping Status*
***August 20, 2015***



# Alaska Geospatial Council

DNR Comm. Mark Myers, chair

State Memorandum of Agreement

- Natural Resources
- Environmental Conservation
- Fish & Game
- University of Alaska
- Transportation & Public Facilities
- Military & Veterans Affairs
- Commerce, Community & Economic Development

Members to be annexed

- 3 Federal agencies, inc. USGS
- Alaska Native Corporation
- Local Gov't

# State of Alaska Update

## Alaska Geospatial Council

- Signed Memorandum of Agreement (initial members, Governor)

## Geospatial Information Officer

- Established within the Dept. of Natural Resources

## Upcoming fiscal year funding

- Limited funds for mapping

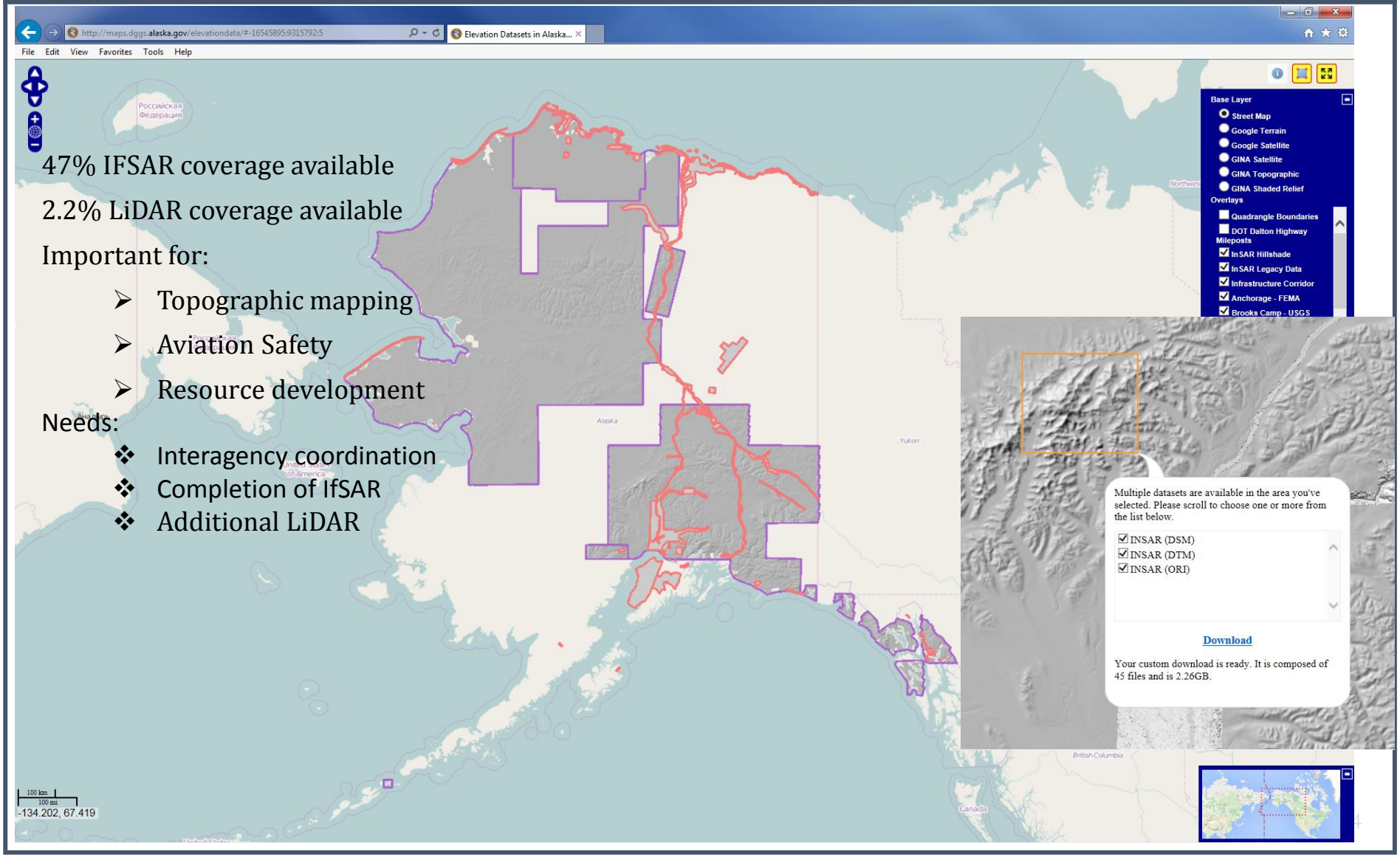
## Statewide datasets

- 2.5-meter statewide imagery orthomosaic complete
- Regional hydrography stewardship model expanded statewide

## Alaska mapping and Arctic Policy

- Mapping efforts support Arctic objectives

# TOPOGRAPHY




47% IFSAR coverage available

2.2% LiDAR coverage available

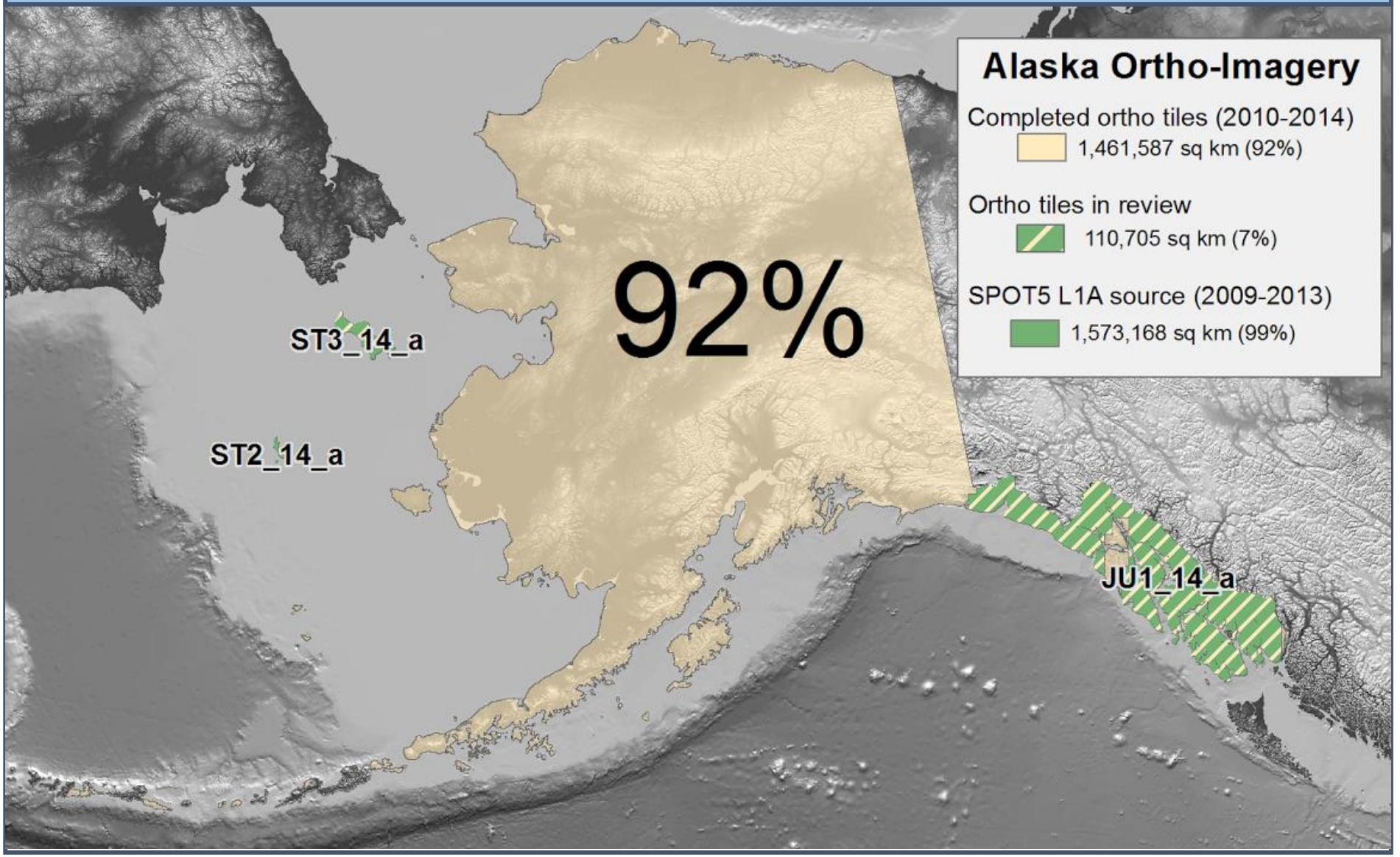
Important for:

- Topographic mapping
- Aviation Safety
- Resource development

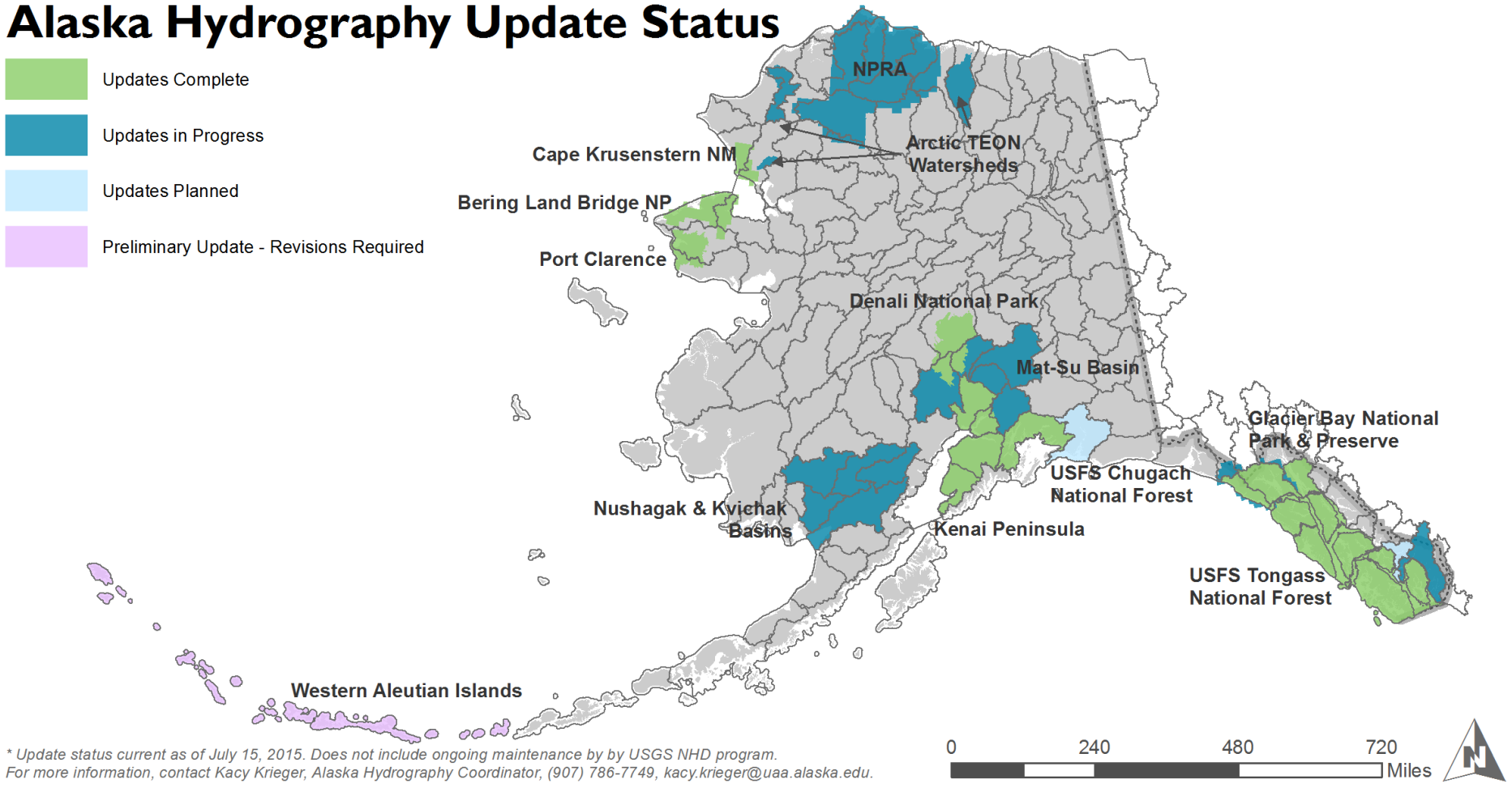
Needs:

- Interagency coordination
- Completion of IfSAR
- Additional LiDAR

# ORTHO-IMAGERY



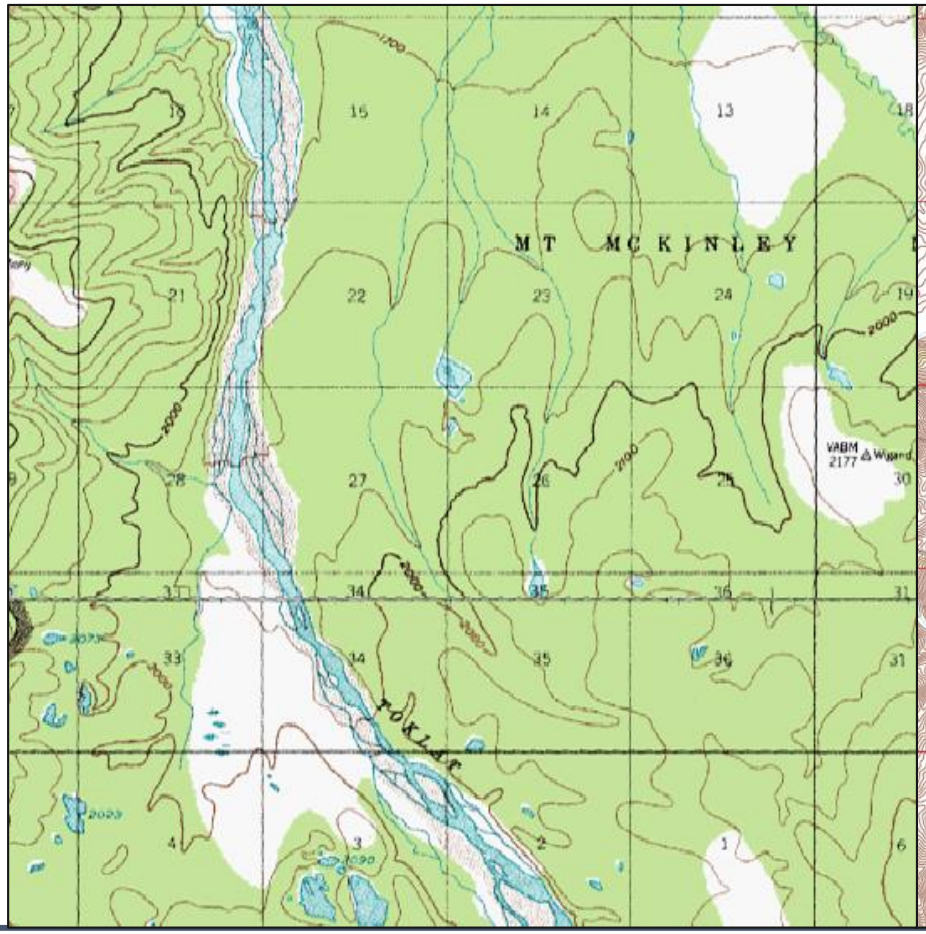
# Hydrography (AKHydro)

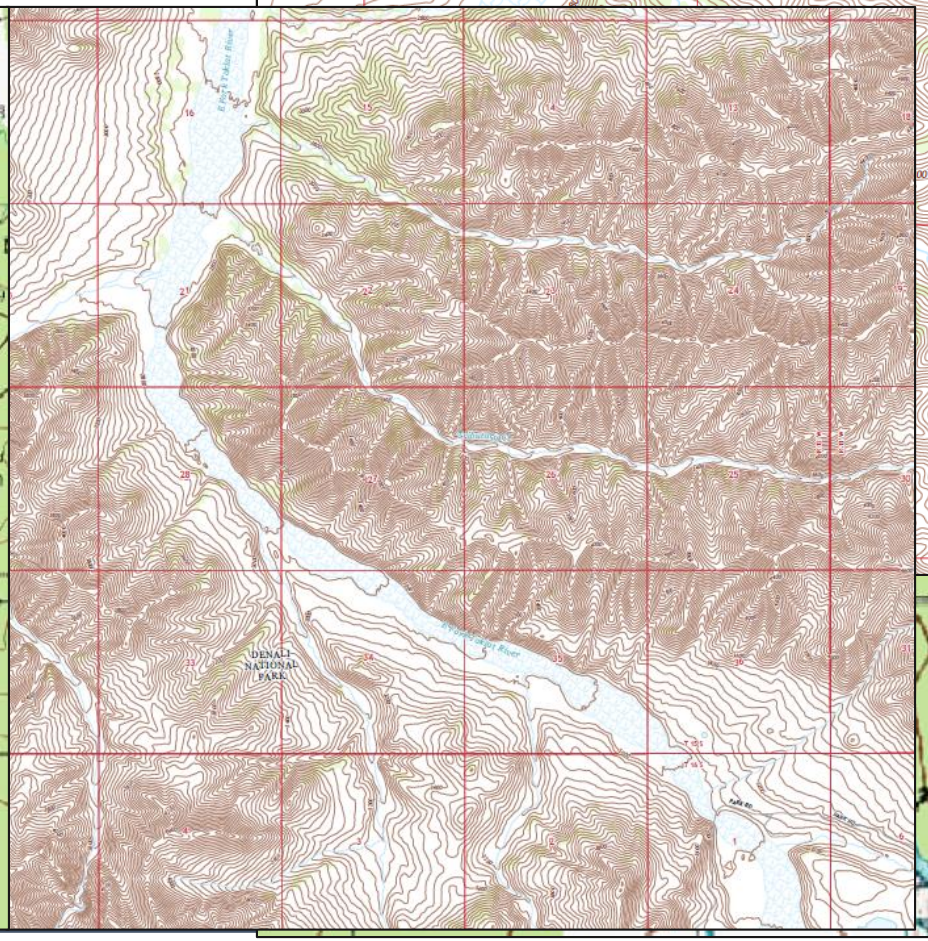



** Update status current as of July 15, 2015. Does not include ongoing maintenance by by USGS NHD program.*
*For more information, contact Kacy Krieger, Alaska Hydrography Coordinator, (907) 786-7749, kacy.krieger@uaa.alaska.edu.*

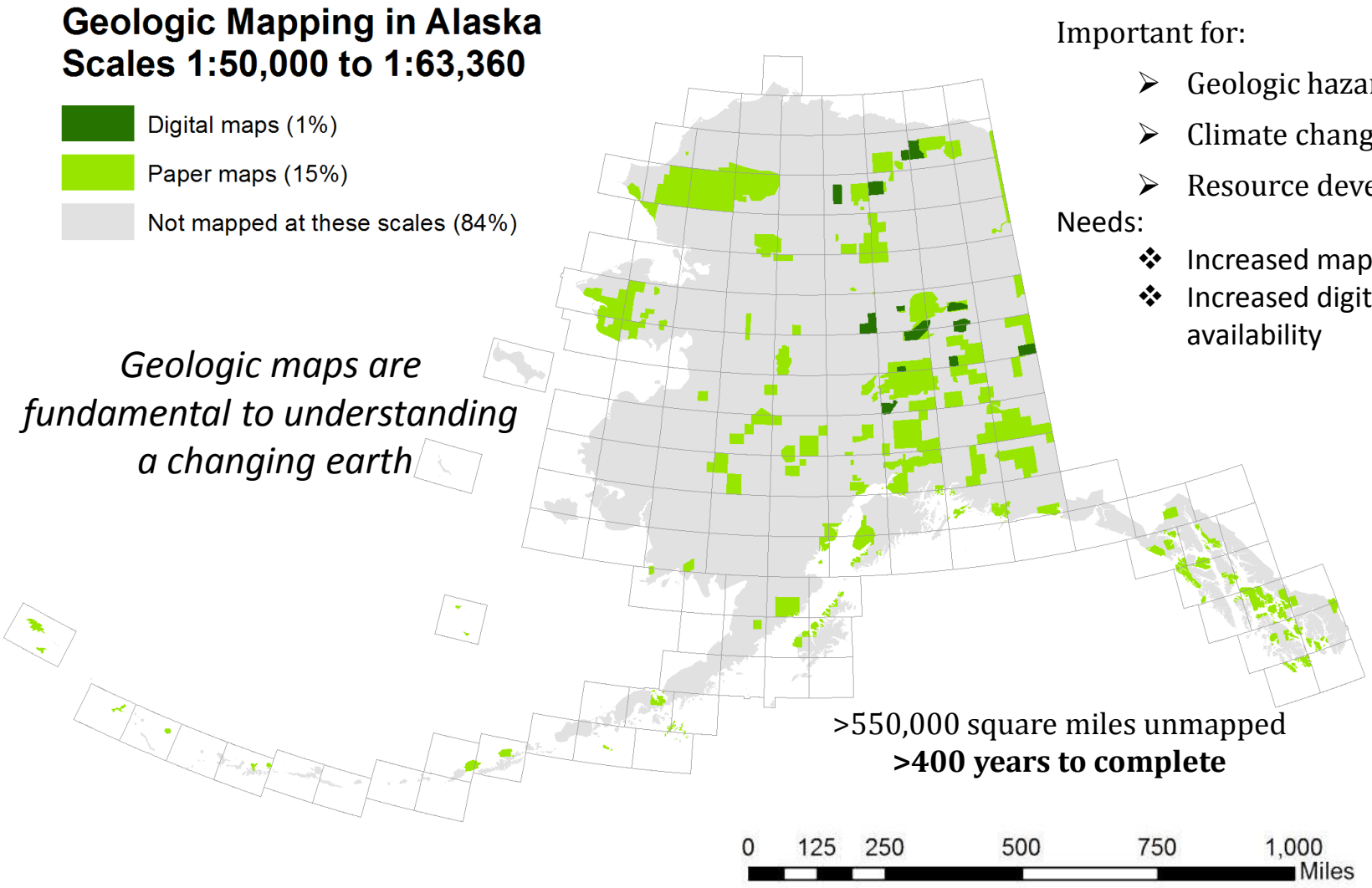
# Topographic Improvements

N. Denali hydrography: old vs new



# Geologic Mapping




*Geologic maps are fundamental to understanding a changing earth*

Important for:

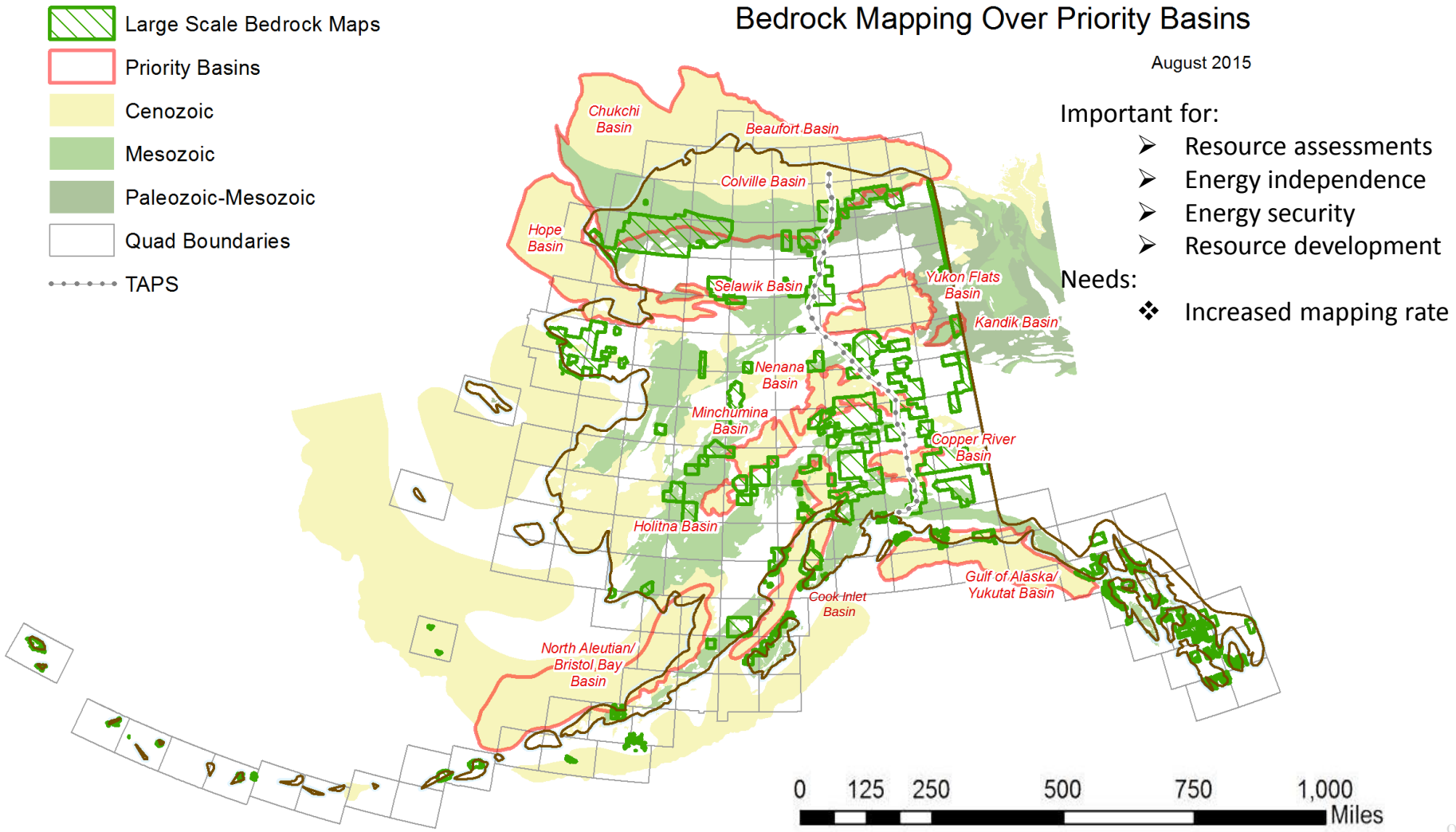
- Geologic hazards
- Climate change impacts
- Resource development

Needs:

- Increased mapping rate
- Increased digital data availability

>550,000 square miles unmapped
**>400 years to complete**

# Fossil Energy Basins



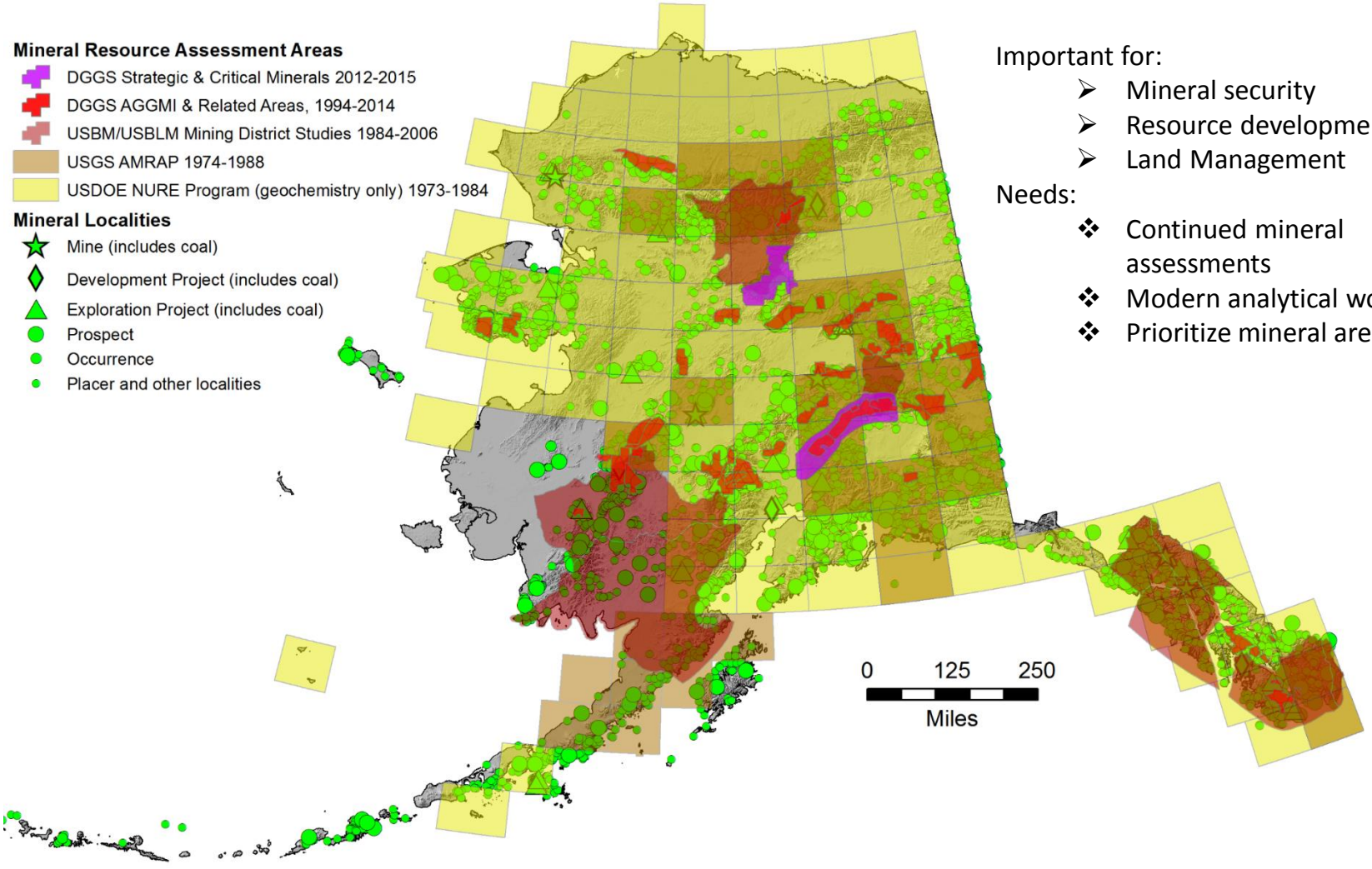

Important for:

- Resource assessments
- Energy independence
- Energy security
- Resource development

Needs:

- Increased mapping rate

# Mineral Resources



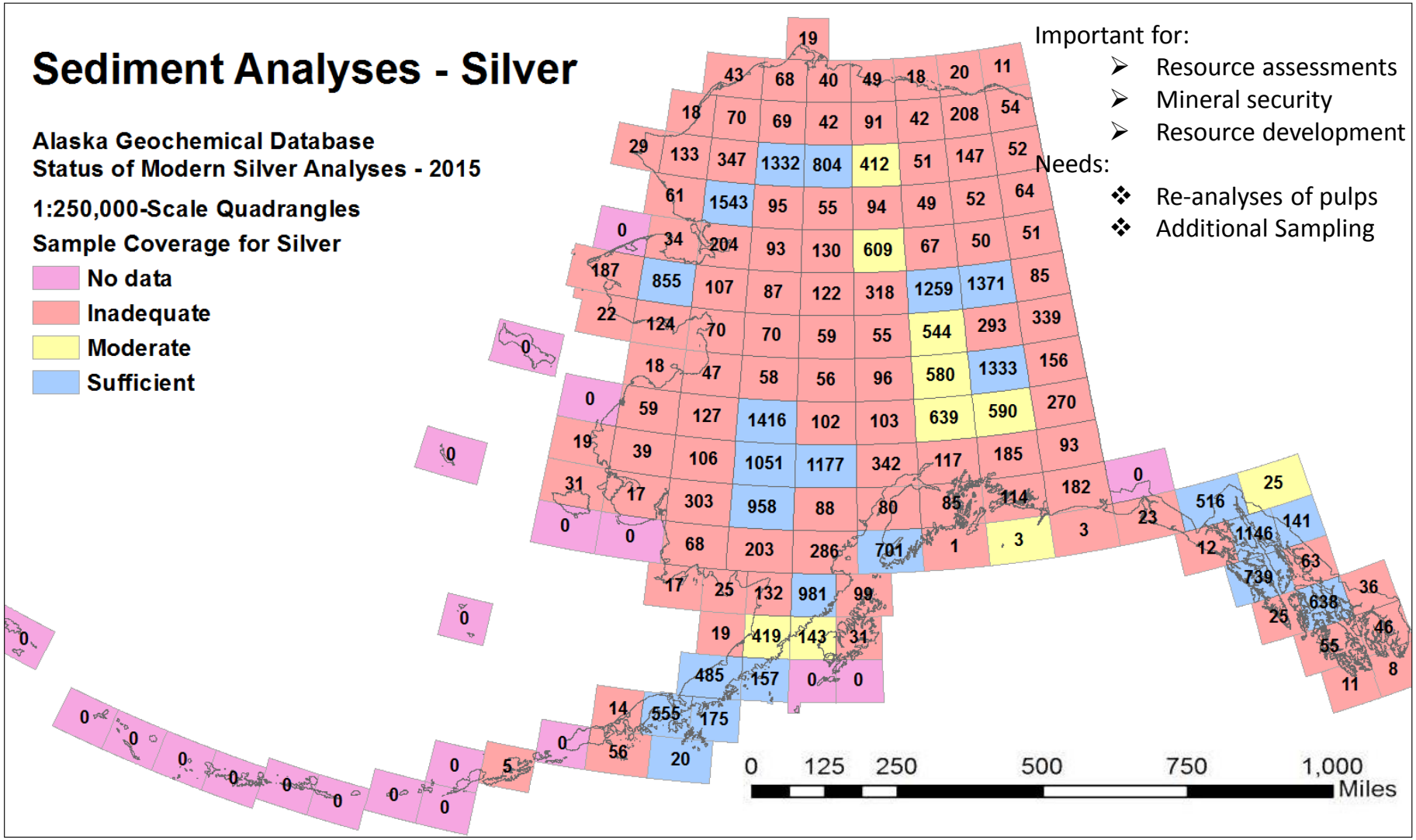

Important for:

- Mineral security
- Resource development
- Land Management

Needs:

- Continued mineral assessments
- Modern analytical work
- Prioritize mineral areas

# GEOCHEMISTRY



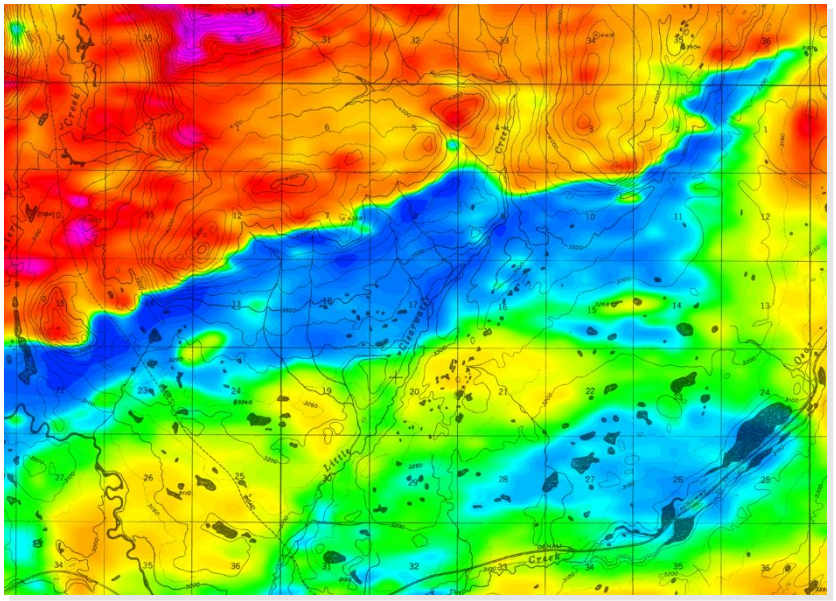
# Geophysics & Remote Sensing

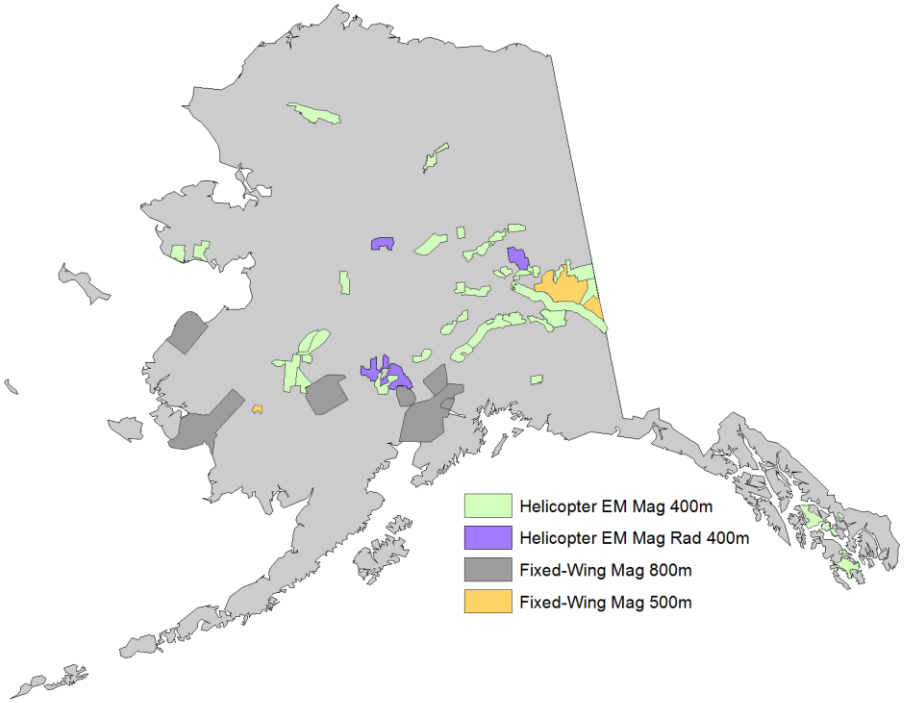
Important for:

- Geologic mapping
- Mineral security
- Resource development

Needs:

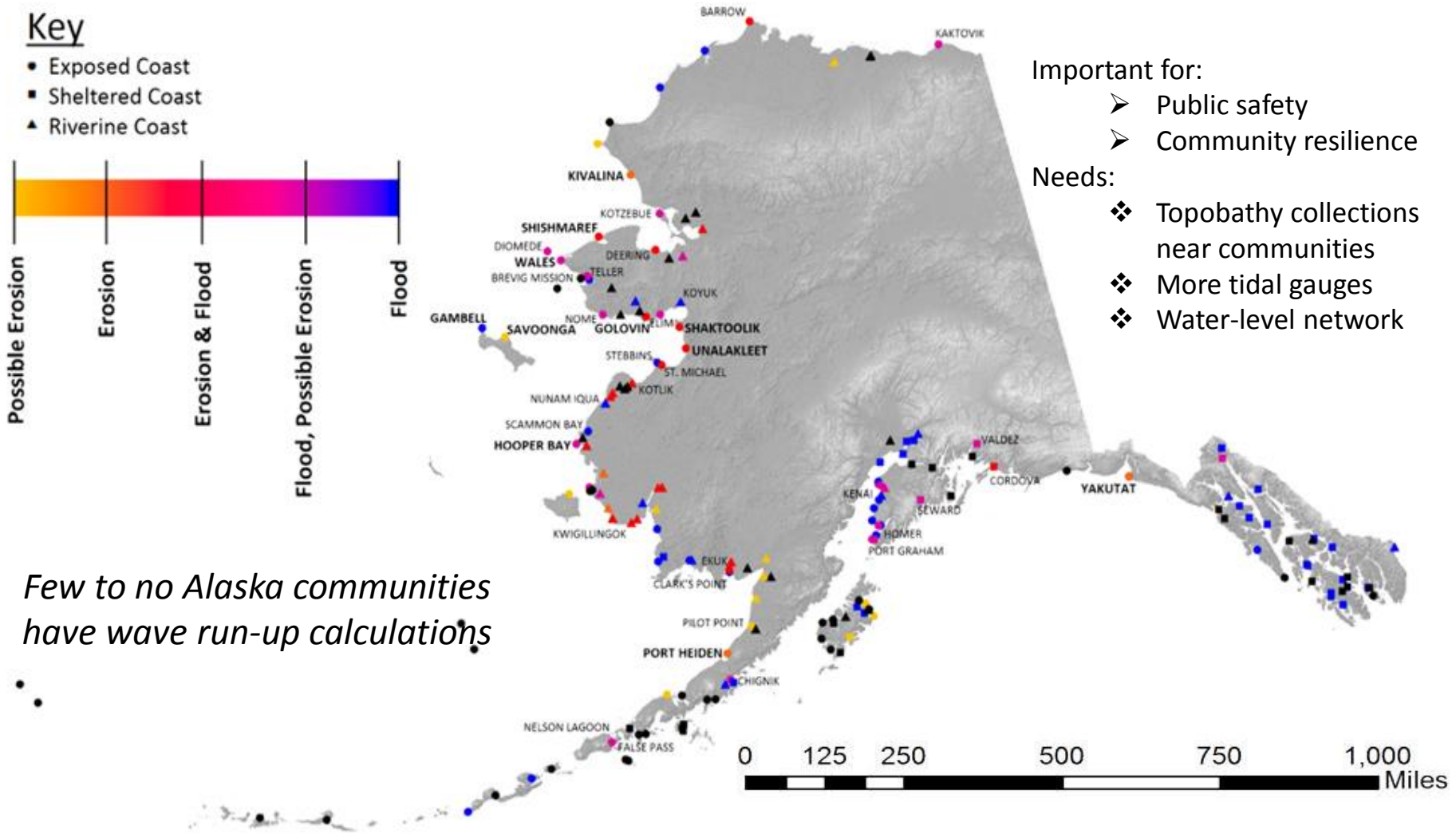
- Increased rate of data acquisition






- 4% State coverage magnetics
- 20% of high potential areas flown
- Less coverage for electromagnetic and radiometric data
- 0% coverage with hyperspectral (First surveys - USGS-2014/2015)

# Storm Surge Vulnerability




*Few to no Alaska communities have wave run-up calculations*

Important for:

- Public safety
- Community resilience

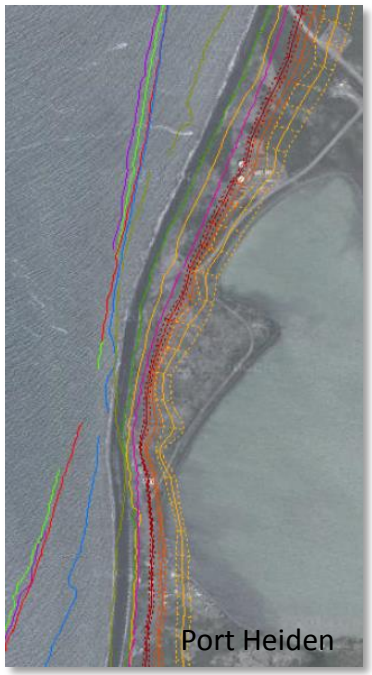
Needs:

- Topobathy collections near communities
- More tidal gauges
- Water-level network

# Shoreline Change

Age of the best-available mapped shoreline position in Alaska (National Geodetic Survey, 2015)

- Unknown
- Pre-Statehood (1959)
- 1960-1999
- 2000-2009
- 2010-Present




Important for:

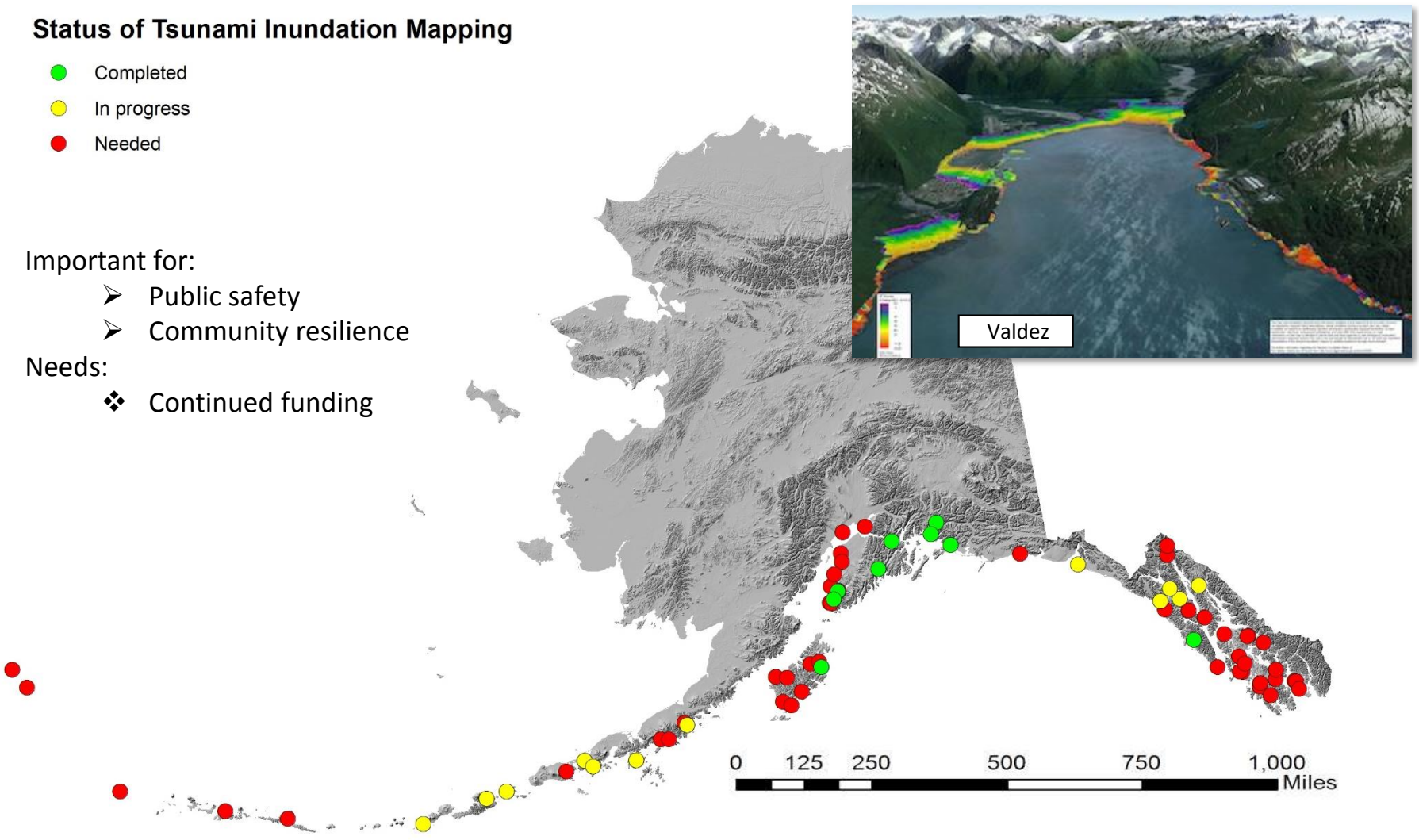
- Safe navigation
- Coastal change detection
- Coastal community resilience & planning
- Coastal ecosystem changes

Needs:

- Orthorectification of historic imagery
- Updated coastal elevation models
- Increased rate of shoreline mapping
- Repeat collections

0 125 250 500 750 1,000 Miles

# Tsunami Inundation Maps




Important for:

- Public safety
- Community resilience

Needs:

- Continued funding

# Avalanche Mapping

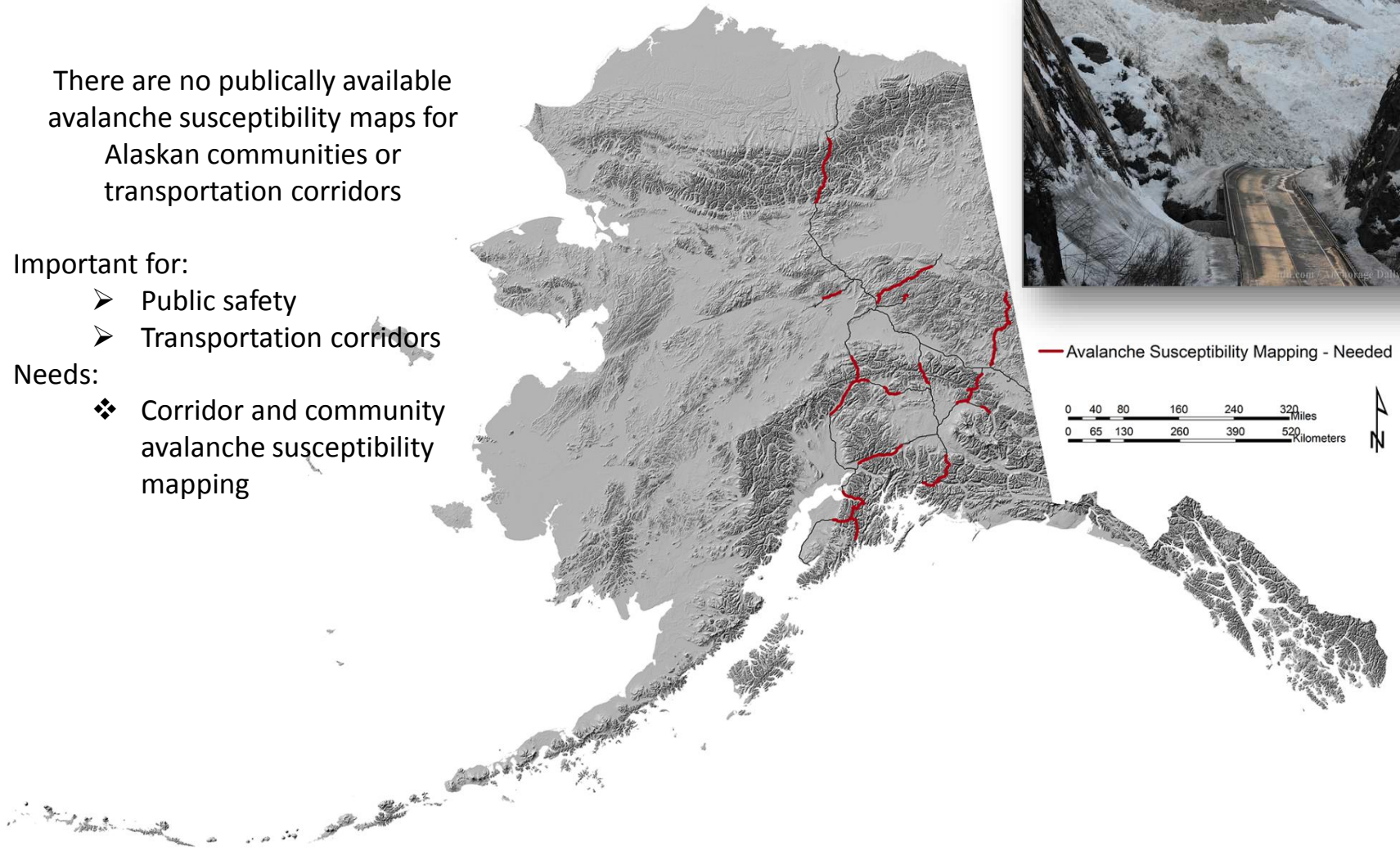
There are no publically available avalanche susceptibility maps for Alaskan communities or transportation corridors

Important for:

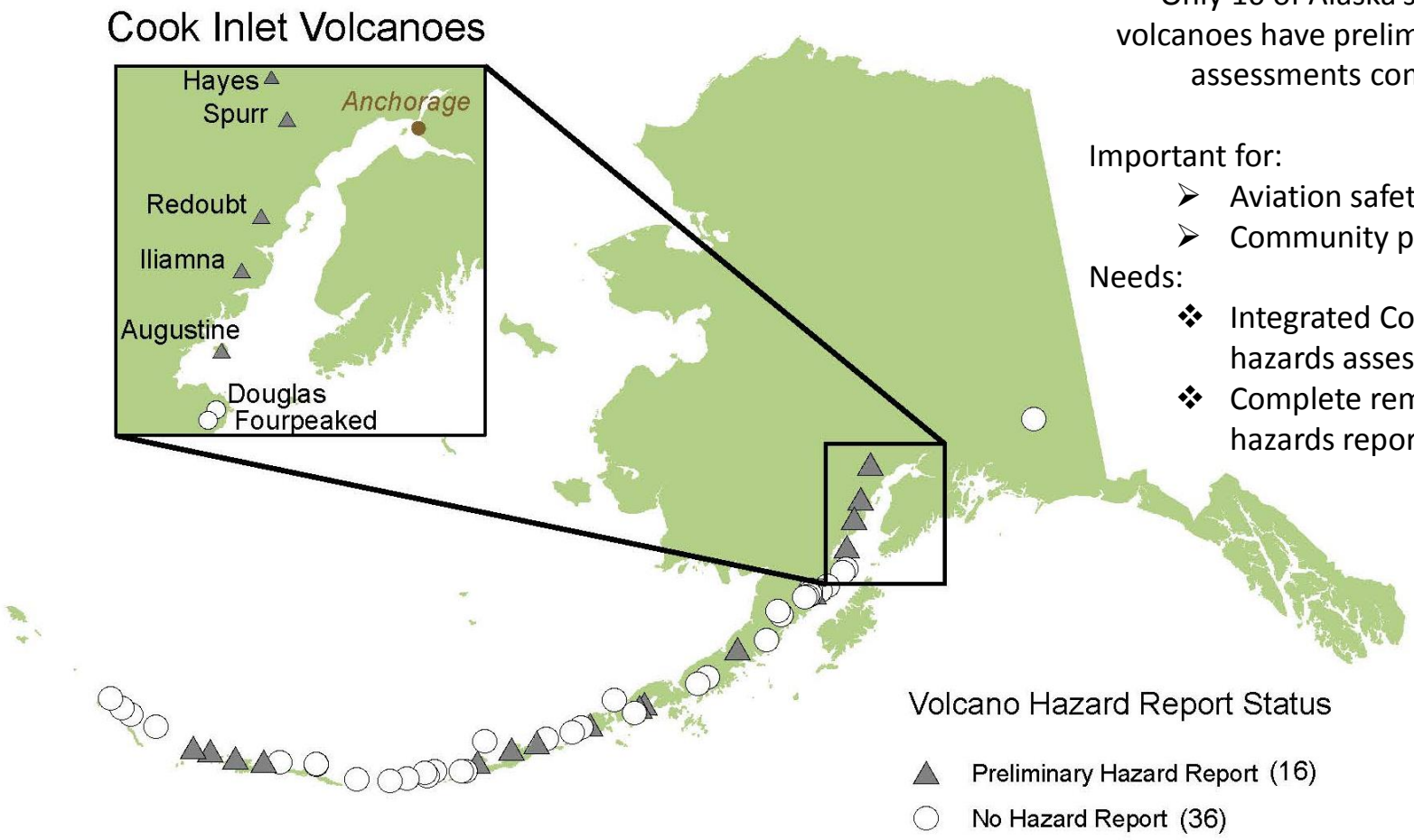
- Public safety
- Transportation corridors

Needs:

- Corridor and community avalanche susceptibility mapping



# Volcanic Hazard Assessments




Only 16 of Alaska's 52 active volcanoes have preliminary hazard assessments completed

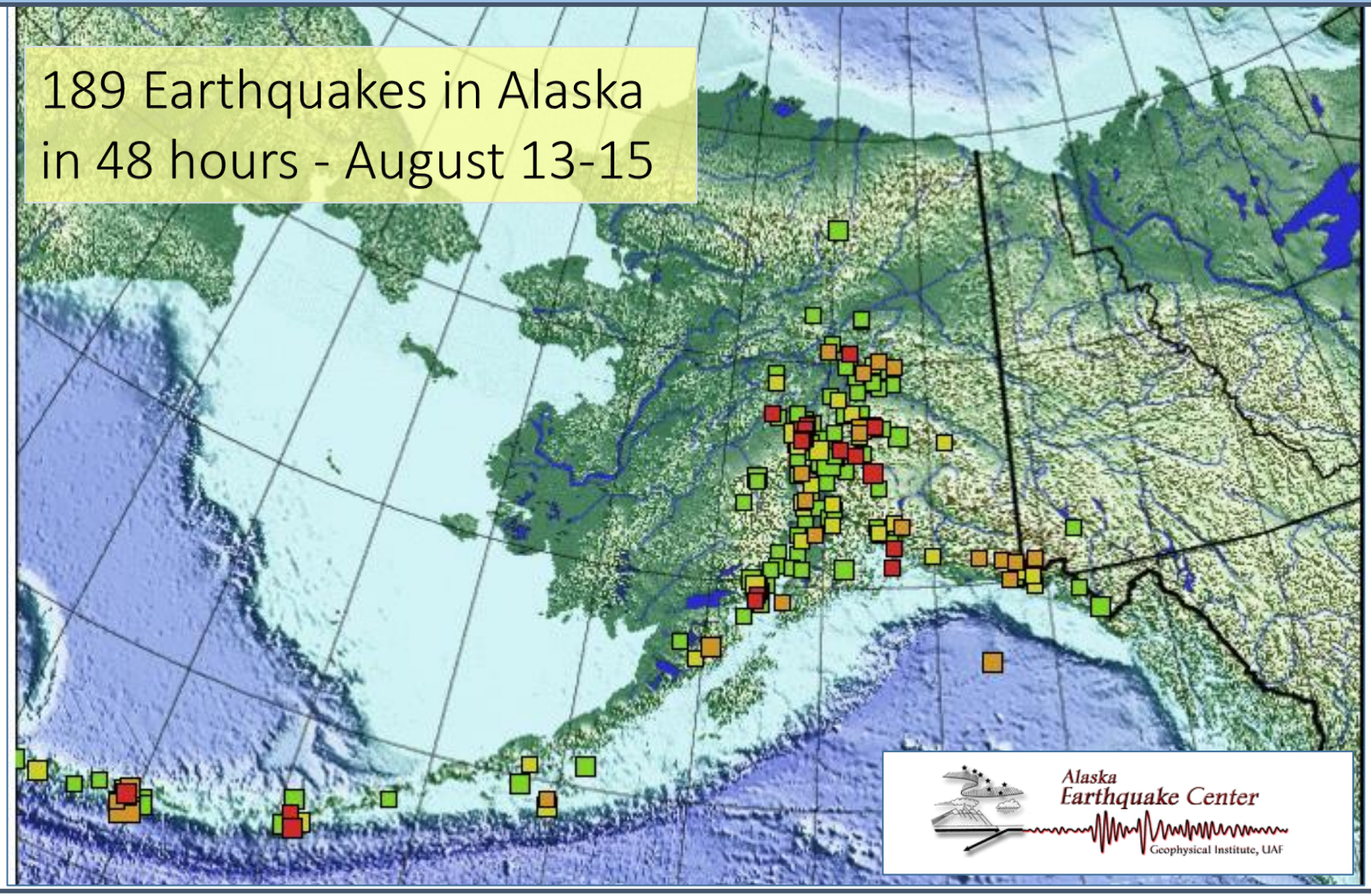
Important for:

- Aviation safety
- Community planning

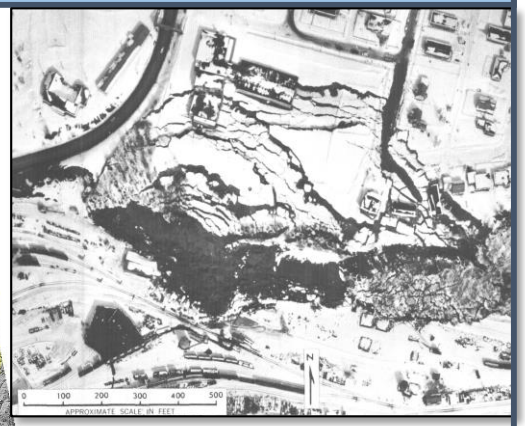
Needs:

- Integrated Cook Inlet hazards assessment
- Complete remaining hazards reports

# Seismic Risk



# Liquefaction Mapping



**Liquefaction Susceptibility Mapping Needs**

- Higher priority
- Medium priority
- Lower priority
- Current mapping

Alaska is the most seismically active State in the nation, only two communities have preliminary evaluations

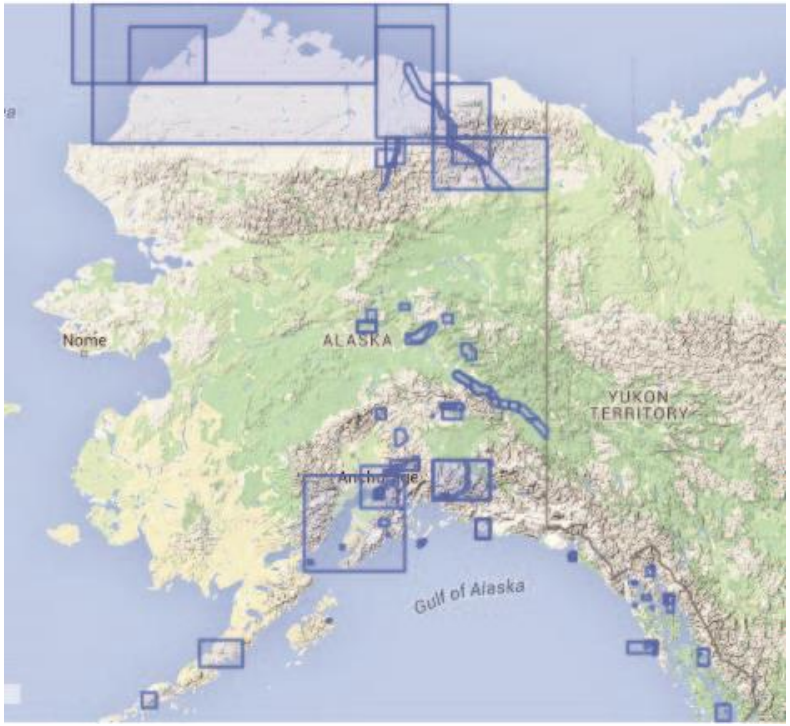
Important for:

- Public safety
- Infrastructure resilience
- National defense

Needs:

- Liquefaction mapping of priority communities and infrastructure

# Landslide Mapping




August 18, 2015 Sitka Landslide; homes destroyed, 3 people missing

Landslide mapping of communities and infrastructure is critically inadequate

Important for:

- Public safety
- Infrastructure resilience

Needs:

- Community and infrastructure landslide mapping